

Claims

1. A method for choosing a compression mode from a set of compression modes, for encoding a block of a video frame, the method comprising the steps of:
 - compressing the block with a plurality of compression modes selected from said set, to obtain compressed blocks;
 - selecting a time-related term, associated with decoding time required for decoding the block by a receiving terminal;
 - using the time-related term as a part of an extended cost function;
 - calculating a cost of each of said compressed blocks;
 - choosing the compression mode providing a minimum cost as the final compression mode of the block.
2. The method for choosing a compression mode as in claim 1, wherein a single time-related term is used for all frames of the video.
3. The method for choosing a compression mode as in claim 2, wherein the time-related term is derived using one of a plurality of capacity groups, each capacity group comprising data of particular decoding time common to mobile terminals having approximately or precisely similar decoding capacities.
4. The method for choosing a compression mode as in claim 1, wherein a weighting factor is included in the time-related term.
5. The method for choosing a compression mode as in claim 1, wherein the extended cost function further comprise a distortion-related term and a byte usage-related term.
6. The method for choosing a compression mode as in claim 1, further comprising the step of:
 - using a Langrangian cost function as a part of the extended cost function.
7. The method for choosing a compression mode as in claim 1, further comprising the step of:
 - adding extra modes to the set of compression modes, the extra modes being optimized for various decoding times.

8. The method for choosing a compression mode as in claim 1, wherein selection of the time-related term is made in response to information about the receiving terminal capabilities.

9. The method for choosing a compression mode as in claim 8, further comprising the step of:

 sending a test message to the receiving terminal; and

 deriving said information from the reply to the test message;

10. The method for choosing a compression mode as in claim 2, wherein in response to a request from the receiving terminal,

 a capacity group associated with the receiving terminal is selected, and,

 the video encoded according to the capacity group is fetched from a video storage and transmitted to the receiving terminal.

11. The method for choosing compression mode as in claim 1, further comprising the step of receiving information regarding decoding times from the receiving terminal, and using said information in formulating the time related term.

12. An encoder for encoding a video frame divided into a plurality of blocks, and being able to encode said blocks in a plurality of compression modes, the encoder comprising:

 a compression unit for compressing a block in a plurality of compression modes;

 logic for calculating a cost of each compressed block utilizing an extended cost function comprising at least a time-related term selected in accordance with capabilities of an intended receiving terminal;

 selection logic for selecting a compression mode having a minimum cost.

13. The encoder as in claim 12, wherein the extended cost function further comprises a distortion-related term, and a byte usage-related term.

14. The encoder as in claim 12, wherein said time related term further comprises a weighting factor.

15. An encoder according to claim 12, wherein said time related term is created in accordance with the time required to decode a block in said terminal.

16. An encoder according to claim 12, wherein the time related term is obtained from a capacity group, said capacity group being selected from a plurality of capacity groups in accordance with the type or capabilities of the receiving terminal.

17. A video server having a network unit for receiving a request for a video and for transmitting encoded video frames in response to the request, the video server comprising:

an encoder adapted to encode the video by:

selecting a time-related term corresponding to the decoding capacity of an intended receiving terminal, said time-related term reflective of decoding time required by the terminal to decode a block of an encoded video frame comprising a plurality of frame blocks;

compressing at least one of the frame blocks utilizing a plurality of compression modes to obtain a plurality of compressed blocks;

calculating a cost for at least two of said compressed blocks, utilizing an extended cost function, said function comprising a distortion-related term, a byte usage-related term, and the time-related term;

selecting the compression mode associated with the compressed block having the lowest cost, as the compression mode for encoding the relevant frame block.

18. The video server as in claim 17, wherein the server is further adapted to encode the video with different time-related terms and store the encoded videos in a video storage, wherein the requested video is delivered from the video storage..

19. The video server as in claim 17, wherein the time-related term is selected from a pre-stored set of time-related terms.

20. The video server as in claim 17, wherein said encoder is further adapted to store the selected compressed block, or to transmit the compressed block to a receiving terminal.